

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. Where claims have been amended and/or canceled, such amendments and/or cancellations are done without prejudice and/or waiver and/or disclaimer to the claimed and/or disclosed subject matter, and Assignee reserves the right to claim this subject matter and/or other disclosed subject matter in a continuing application or otherwise.

1. (Previously Presented): An apparatus, comprising:

Management Frames utilized in wireless communications associated with said apparatus; and

said Management Frames being protection-capable or non-protection-capable and wherein said Management Frames indicate whether or not they are protection-capable based on a state of a Robust Security Network (RSN) Capabilities bit;

wherein if the state of said RSN Capabilities bit is set to protection-capable, said Management Frames are protected by applying an IEEE 802.11i CCMP protocol-based encryption technique to said protection-capable Management Frames.

2. (Previously Presented): The apparatus of claim 1, wherein at least one of said Management Frames comprises an Action Frame.

3. (Previously Presented): The apparatus of claim 2, wherein said RSN Capabilities bit provides a protection negotiation capability to the Action Frame.

4. (Previously Presented): The apparatus of claim 3, wherein said Action Frame protection negotiation is provided by a Beacon/Probe Response source setting the state of said

RSN Capabilities bit to indicate that protection is required for all protection-capable Action Frames.

5. (Canceled)

6. (Previously Presented): The apparatus of claim 3, wherein if the state of said RSN Capabilities bit is set to protection-capable, said Action Frame is protected by applying an IEEE 802.11i TKIP protocol-based encryption technique to said protection-capable Action Frame.

7. (Previously Presented): The apparatus of claim 1, wherein said CCMP protocol-based encryption technique uses CCM to encrypt the Management Frame payload and to protect selected Management Frame header fields from modification.

8. (Previously Presented): The apparatus of claim 1, wherein said apparatus comprises a pair of Wireless stations (STA).

9. (Previously Presented): The apparatus of claim 8, wherein at least one of said pair of wireless stations (STA) comprises an access point (AP).

10. (Previously Presented): The apparatus of claim 6, wherein said TKIP protocol-based encryption technique uses RC4 to encrypt the Management Frame payload and uses Michael to protect selected Management Frame header fields from modification.

11. (Previously Presented): The apparatus of claim 6, wherein said apparatus comprises a pair of wireless stations (STA).

12. (Previously Presented): The apparatus of claim 11, wherein at least one of said wireless stations (STA) comprises an access point (AP).

13. (Previously Presented): The apparatus of claim 8, wherein one of the pair of STAs sourcing a Beacons and Probe Response, said STA sourcing Beacons and Probe Responses setting the state of the RSN Capabilities bit to 0 if said protected Management Frames are not supported/enabled and setting the state of the RSN Capabilities bit to 1 if said protected Management Frames are supported and enabled; the other of the pair of STAs responding by setting the state of the RSN Capabilities bit to 0 if the responding STA does not support protected Management Frames; and said responding STA setting the state of the RSN Capabilities bit to 1 if the responding STA supports protected Management Frames.

14. (Previously Presented): The apparatus of claim 1, wherein said wireless communications comprises an 802.11-based wireless LAN.

15. (Currently Amended): A method of protecting Management Frames in wireless communications, comprising:

determining whether establishing said Management Frames are protection-capable or are non- protection-capable; ~~and~~

~~protecting said Management Frames if said Management Frames are protection-capable by adding a Robust Security Network (RSN) Capabilities bit to said Management Frames if the Management Security Frames are protection-capable, a state of the RSN Capabilities indicating whether the Management Security Frames are set to protection-capable;~~
and

~~protecting the Management Frames for Management Frame protection negotiation by applying an IEEE 802.11i protocol-based encryption technique to the protection-capable Management Frames based on a state of the RSN Capabilities bit, wherein if the state of said RSN Capabilities bit is set to protection-capable, said Management Frames are protected by applying an IEEE 802.11i CCMP protocol-based encryption technique to said protection-capable Management Frames.~~

16. (Canceled)

17. (Previously Presented): The method of claim 15, wherein said Management Frame protection negotiation is provided by a Beacon/Probe Response source setting the state of said RSN bit to indicate that protection is required for all protection-capable Action Frames.

18. (Canceled)

19. (Previously Presented): The method of claim 15, wherein at least one of said Management Frames comprises an Action Frame.

20. (Previously Presented): The method of claim 15, wherein if the state of said RSN Capabilities bit is set to protection-capable, said Management Frames are protected by applying an IEEE 802.11i TKIP protocol-based encryption technique to said protection-capable Management Frames.

21. (Currently Amended): The method of claim 15, wherein if the state of the RSN Capabilities bit is set to protection-capable, the Management Frames are protected by applying an IEEE 802.11i CCMP protocol-based encryption technique to the protection-capable Management Frames, said CCMP protocol-based encryption technique using~~uses~~ CCM to encrypt the Management Frame payload and to protect selected Management Frame header fields from modification.

22. (Previously Presented): The method of claim 20, wherein said TKIP protocol-based encryption technique uses RC4 to encrypt the Management Frame payload and uses Michael to protect selected Management Frame header fields from modification.

23. (Previously Presented): The method of claim 15, wherein said wireless communications comprises wireless communications between a pair of wireless stations (STA), one which comprises an access point (AP).

24. (Previously Presented): The method of claim 23, wherein one of the pair of STAs comprising a sourcing STA that sets the state of the RSN Capabilities bit to 0 if said protected Management Frames are not supported/enabled; said sourcing STA setting the state of the RSN Capabilities bit to 1 if said protected Management Frames are supported and enabled; the other of the pair of STAs responding by setting the state of the RSN Capabilities bit to 0 if the responding STA does not support protected Management Frames; and said responding STA

setting the state of the RSN Capabilities bit to 1 if the responding STA supports protected Action Frames.

25. (Previously Presented): The method of claim 15, wherein said wireless communications comprises an IEEE 802.11-based wireless LAN.

26. (Previously Presented): An article comprising a storage medium having stored thereon instructions, that, when executed by a computing platform, establishes, in a wireless communication environment, protection-capable and non-protection-capable Management Frames, said protection-capable Management Frames being protected;

wherein said protection-capable Management Frames are protected by adding a Robust Security Network (RSN) Capabilities bit to said Management Frames for Management Frame protection negotiation based on a state of the RSN Capabilities bit, wherein if the state of said RSN Capabilities bit is set to protection-capable, said Management Frames are protected by applying an IEEE 802.11i CCMP protocol-based encryption technique for an IEEE 802.11i TKIP protocol-based encryption technique to said protection-capable Management Frames.

27. (Canceled)

28. (Previously Presented): The article of claim 26, wherein said Management Frame protection negotiation is provided by a source of a Beacon/Probe Response setting the state of said RSN Capabilities bit to indicate that protection is required for all protection-capable Action Frames.

29. (Canceled)

30. (Previously Presented): The article of claim 26, wherein at least one of said Management Frames comprises an Action Frame.

31. (Previously Presented): The article of claim 26, wherein said CCMP protocol-based encryption technique uses CCM to encrypt the Management Frame payload and to protect selected Management Frame header fields from modification, or uses the TKIP protocol-based encryption technique which uses RC4 to encrypt the Management Frame payload and Michael to protect selected Management Frame header fields from modification.

32. (Previously Presented): The article of claim 26, wherein said wireless communications comprises an IEEE 802.11-based wireless communications between a pair wireless stations (STA), one of which comprises an access point (AP).

33. (Previously Presented): A system to protect Action Frames in Wireless LAN Communications, comprising:

a first wireless station (STA); and

a second STA in communication with said first STA, said communication comprising non-protection-capable Action Frames and protection-capable Action Frames;

wherein if the wireless communication requires protected Action Frames, then said first or said second STA discards any unprotected protection-capable Action Frame it receives, and wherein the discard of any unprotected protection-capable Action Frames includes those received before an IEEE 802.11i-based 4-Way Handshake completes.

34. (Previously Presented): The system of claim 33, wherein if it is desired not to protect Action Frames, then the first and second STAs send all Action Frames without protection, including all protection capable Action Frames.

35. (Previously Presented): The system of claim 33, wherein if it is desired to protect Action Frames, then a STA protects all protection-capable Action Frames, said protection provided by adding a Robust Security Network (RSN) Capabilities bit to said Action Frames for Action Frame protection negotiation, wherein if a state of said RSN Capabilities bit is set to protection-capable, said Action Frames are protected by applying a CCMP protocol-based encryption technique that uses CCM to encrypt the Action Frame payload and to protect selected Action Frame header fields from modification, or by applying the TKIP protocol-based encryption technique that uses RC4 to encrypt the Action Frame payload and Michael to protect selected Action Frame header fields from modification.

36. (Previously Presented): The system of claim 33, where said first STA does not send protection-capable Action Frames at all if said second STA has not agreed to protection.

37. (Canceled)

38. (Canceled)

39. (Previously Presented): The system of claim 33, wherein neither said first nor said second STA attempt to protect non-protection-capable Action Frames the STA sends and discards any non-protection-capable Action Frames the STA receives protected.

40. (Previously Presented): The system of claim 33, further comprising a third STA in communication with said second STA.